

SMART Steel Crash Cushion

Product summary

Status	Accepted
Category	Permanent – Redirective crash cushion / impact attenuator
Test Level	Test Level 3 (MASH): 100km/h (refer to design requirements)
Supplier	LB Australia
Description	Steel Redirective Crash Cushion

Introduction and purpose

This detail sheet is intended to supplement *VicRoads Road Design Note 06-04 - Accepted Safety Barrier Products*. Please refer to RDN 06-04 for the current VicRoads acceptance status, information on the product assessment process and general acceptance conditions.

The technical details within this document have been extracted from information submitted to VicRoads by the Supplier and the recommended 'Conditions for Use' from the Austroads Safety Barrier Assessment Panel (ASBAP).

VicRoads requirements take precedence over the product manual and Austroads conditions. Where a departure from these requirements is required, users should understand the risks and document their engineering decisions.

For more detailed product information, refer to the individual product manual or contact the System Supplier.

Technical information

The SMART Steel Crash Cushion should be designed, installed and maintained in accordance with the following VicRoads conditions for use.

These conditions for use have been based on an Austroads assessment of technical performance against AS/NZS 3845 and contain VicRoads specific requirements when necessary.



Typical installation arrangement shown above.

Summary Conditions for Use

Accepted configuration	SMART Steel Crash Cushion
Variants	SCI100GM – 100km/h SCI70GM – 70km/h
Product manual reviewed	September 2015
ASBAP issue	12 December 2019

Refer *VicRoads conditions for use (below)*.

VicRoads Conditions for Use

Tested design requirements

Containment level	Speed (km/h)	Vehicle mass (kg)	Point of Redirection (m)*		Tested length of attenuator (m)	Anchor/Pin Spacing (m)*	Dynamic deflection (m)	Working width (m)	Notes
			Leading	Trailing					
MASH TL-3	100	2270	Fully redirective		6.6	Refer to Product Manual	N/A	N/A	SCI100GM Variant
MASH TL-2	70	2270	Fully redirective		4.2		N/A	N/A	SCI70GM Variant

Approved Terminals and Connections

<i>Crash Cushions or Terminals must be fitted to both ends of a barrier</i>	
Public Domain Products	
W-Beam Guardrail	Not permitted
Thrie-Beam Guardrail	Permitted – THIRE BEAM Transition Assembly
Type F Concrete Safety Barrier	Permitted – F SHAPE Barrier Transition Assembly
Proprietary Products	
	Refer to applicable VicRoads Detail Sheet for use acceptance conditions

Design Guidance

System width (m)	0.96 for SCI100GM Variant 0.88 for SCI70GM Variant
Installation	This product must be installed and maintained in accordance with the Product Manual and Road Agency specifications. Road Agency specifications and standards shall have precedence.
Minimum distance to excavation	Minimum distance between the edge of the barrier and the edge of an excavation: <ul style="list-style-type: none"> 0.2 metres when anchored on concrete pavement. 0.6 metres when anchored on flexible pavement. (Being 1.5 times the embedment depth of the anchor)
Slope limit	Side slope limit: 10 Horizontal to 1 Vertical (10%)
Systems conditions	<ol style="list-style-type: none"> Installation on top of a kerb is not recommended, however if installed on top of a kerb, all system components must be free to operate. Refer to Product Manual for installation advice adjacent to elevated kerbs. Colour of nose piece to be determined by local Road Agency.
Gore area use	Permitted
Pedestrian area use	Permitted – consider potential for snagging and deflection.
Cycleway use	Permitted – consider potential for snagging and deflection.
Frequent impact likely	Permitted
Remote location	Permitted
Median use	Permitted

Foundation pavement conditions

Submitted Foundation Pavement Conditions					
Pavement	Use	Accepted Speed (max)	Post/pin spacing (m)	Pavement construction	Post/pin type
Concrete	Permitted	100 km/h	Refer to the Product Manual	Concrete pavement in accordance with manufacturer's drawings	Refer to the Product Manual
Asphalt over granular pavement	Permitted	100 km/h	Refer to the Product Manual	Permanent installations (Installation on reinforced concrete pad in accordance with manufacturer's drawings)	Refer to the Product Manual
Flush seal over granular pavement				Temporary installations (permitted pinned to asphalt)	
Flush seal over granular pavement	Permitted	100 km/h	Refer to the Product Manual	Permitted with concrete pad	Refer to the Product Manual
Unsealed compacted formation	Not Permitted				

Other considerations and comments

Damaged Components

Damaged components must be replaced. Repaired components must not be used.

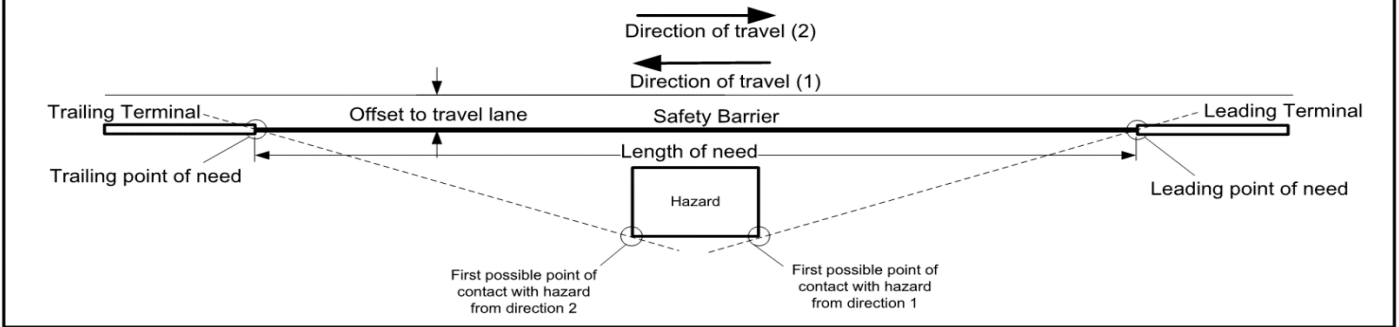
References

- Austroads Guide to Road Design (AGRD) – Part 6.
- VicRoads Supplement to AGRD Part 6
- VicRoads Road Design Note 06-04 Accepted Safety Barrier Products.
- Product Installation Manual and Product Operational Manual refer licensed product supplier website.

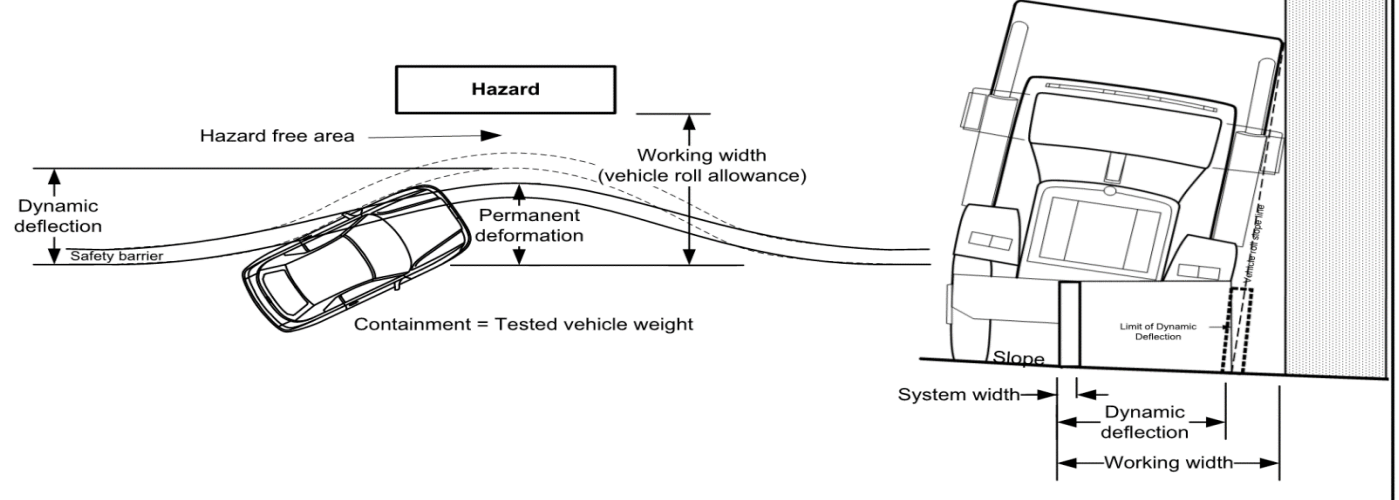
Detail Sheet – Update Summary

Issue	Approved	Amendment
July 2017	M-SSD	First edition
Jan 2019	M-SSE	MASH TL-2 variant added
Jan 2020	M-SSE	Pavement conditions update to match Austroads. Tested length added.

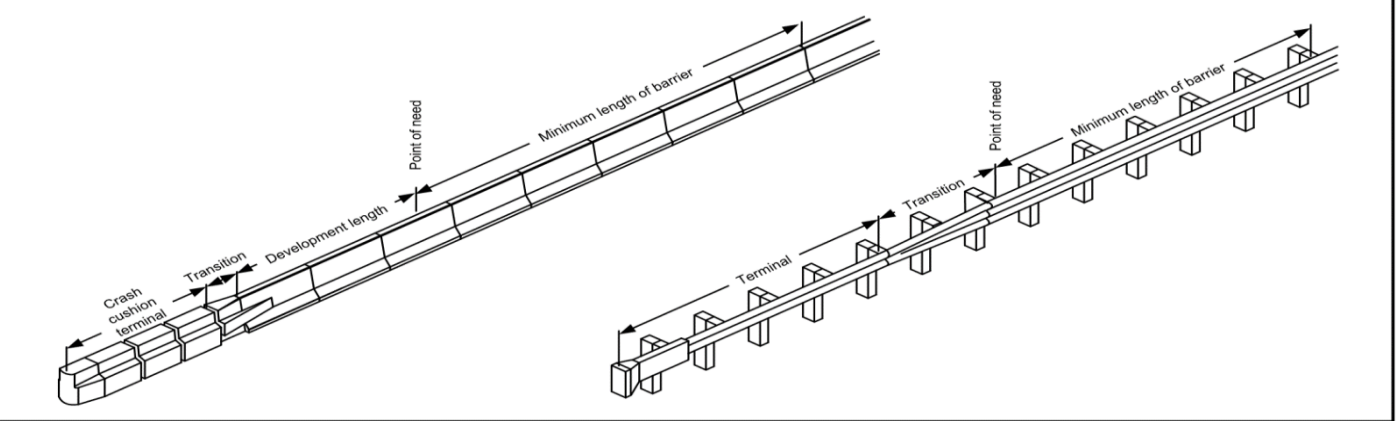
Design Terminology



Deflection Terminology



Terminal Terminology



Flare Terminology

